

# **BEADED DECORATIVE LIGHT STRING**

## **BACKGROUND OF THE INVENTION**

### **[0001] 1. Field of the Invention**

**[0002]** The present invention relates generally to a decorative light string that is commonly used in celebrations and festivals, and in particular to a beaded decorative light string comprised of a plurality of hollow beads attached to wiring of the decorative light string for aesthetic purposes.

### **[0003] 2. Description of the Prior Art**

**[0004]** Light strings are widely used in celebrations and festivals for decoration purposes. Most of the light strings comprise a number of lamps mechanically and electrically connected together in a line by electrical wires. The wires are connected to a plug that is plugged to for example a wall outlet to power the lamps. A variety of designs are available in the market for the lamps. However, only very little effort has been devoted to the improvement for aesthetic purposes of the wiring of the light strings. In other words, conventionally, the wiring of the light string is for the purposes of connection between lamps only and no decoration has been done on the wiring.

**[0005]** Thus, the present invention is aimed to provide a light string of which the wiring is provided with decoration.

## **SUMMARY OF THE INVENTION**

**[0006]** An object of the present invention is to provide a decorative light string comprising decorated wiring connecting lamps.

**[0007]** Another object of the present invention is to provide a decorative light string comprising wiring connecting lamps and decorative beads attached to the

wiring for decoration.

[0008] A further object of the present invention is to provide a light string having enhanced decoration on both wiring and lamps.

[0009] To achieve the above objects, in accordance with the present invention, there is provided a decorative light string comprising electrical wires having first and second sections alternating each other, a lamp electrically and mechanically coupled each second section of the wires, a first decoration spherical bead mounted to each first section of the wires with at least a portion of the first section of the wires extending therethrough and a second decoration spherical bead mounted to each second section of the wires and forming an interior space for accommodating the lamp. The number of the first decoration beads mounted to each first section of the wires between adjacent second decoration beads can be set so that the first section of the wires is substantially covered by the first decoration beads between the adjacent second decoration beads.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

[0010] The present invention will be apparent to those skilled in the art by reading the following description of preferred embodiments thereof, with reference to the attached drawings, in which:

[0011] **Figure 1** is a perspective view of a beaded decorative light string constructed in accordance with a preferred embodiment of the present invention with some beads opened to show inside details;

[0012] **Figure 2** is a cross-sectional view of the beaded decorative light string in accordance with the present invention;

[0013] **Figure 3** is a perspective view of a portion of a beaded decorative light string constructed in accordance with another embodiment of the present invention, with a bead opened to show inside details;

[0014] **Figure 4** is similar to **Figure 3** but showing a beaded decorative light string constructed in accordance with a further embodiment of the present invention, which is a modification of the embodiment illustrated in **Figure 3**;

[0015] **Figure 5** is a schematic view showing an application of the beaded decorative light string of the present invention; and

[0016] **Figures 6** and **7** are perspective views of beaded decorative light strings constructed in accordance with further embodiments of the present invention wherein some beads are replaced by figures of other shapes.

### **DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS**

[0017] With reference to the drawings and in particular to **Figures 1** and **2**, a beaded decorative light string constructed in accordance with the present invention, generally designated with reference numeral **10**, comprises a length of electrical wires **16** comprised of first and second sections (not labeled) alternating each other and a number of lamps **12** retained by lamp sockets **14** that are mechanically and electrically connected to the second sections of the electrical wires **16**. A plug **18** is connected to the wires **16** for selectively plugging into for example a wall outlet (not shown) to supply electricity to the lamps **12**. Optionally, a socket **20** is mounted to the wires **16** for selective connection with a plug of an electrical device (not shown), such as another light string.

[0018] The lamp socket **14** is preferably plastic molded and is provided with a clip **22** that engages the wires **16** for further fixing the lamp **12** to the second section of the wires **16** in a substantially parallel manner. This makes the lamps **12** more securely attached to the wires **16** and makes the assembly of the lamps **12** and the wires **16** more compact.

[0019] Decoration members **24**, **26** are respectively mounted to the first and second sections of the wires **16** whereby the decoration member **24**, **26** covers or surrounds at least a portion of the first or second section of the wires **16**. The

number of the first decoration members **24** mounted to first section of the wires **16** between adjacent second decoration members **26** can be changed arbitrarily whereby at least a portion of the first section of the wires **16** is surrounded by the first decoration members **24**, while the second section of the wires **16** is covered by the second decoration member **26**. In the embodiment illustrated, the decoration members **24** are made in the form of hollow sphere or bead and this is the same to the decoration members **26**. However, the second bead **26** has a diameter larger than that of the first bead **24**. The difference in size between the first and second beads **24**, **26** is for accommodation of the lamp **12** in the second bead **26** and also for variation of the overall outer appearance of the light string **10**. However, it is apparent that both the first and second beads **24**, **26** can be made the same size and shape.

[0020] The first bead **24** that is spherical comprises two hemi-spherical halves **28**, **30** connected in a hinging manner at a position **32** along an opening edge thereof. A coupling device is also provide between the first and second halves **28**, **30**, comprising a pawl **34**, preferably resilient, formed on the second half **30**, preferably at a position substantially opposite to the hinge **32**, and, corresponding to the pawl **34**, a slot or recess **36** defined in the first half **28** for resiliently engaging the pawl **34** for example in a snap-on manner to fix the first and second halves **28**, **30** together. It is apparent that the hinge **32** can be replaced by another coupling means, such as that of the pawl-recess pair. It is also apparent that the coupling device can be replaced by any known coupling means, of which examples include ultra-sonic welding and adhesives.

[0021] Notches **38** are defined in the opening edges of both the first and second halves **28**, **30** and corresponding in position to each other. When the first and second halves **28**, **30** are fixed to each other, the notches **38** form openings through which the first section of the wires **16** extends. The openings are of such a size that forms a tight engagement with the wires **16** by slight deformation of at least one of the halves **28**, **30** and the wires **16**. Thus, the first bead **24** is securely attached to the wires **16** substantially with no relative movement with respect to the wires **16**.

[0022] The second bead **26** in the embodiment illustrated has substantially identical structure. In other words, the second bead **26** comprises first and second halves **40, 42** hinged together at **44** and coupled to each other by a coupling device comprised of a resilient pawl **46** and a recess **48**. Notches **50** are defined in opening edges of the halves **40, 42**, which when the halves **40, 42** are fixed together, form openings for the extension of the second section of the wires **16**.

[0023] It is noted that the lamps **12** are accommodated in the second beads **26** in a floating manner in the embodiment illustrated in **Figures 1 and 2**. In other words, the lamp **12** or the lamp socket **14** is not directly fixed to either one of the halves **40, 42** of the second bead **26**.

[0024] It is noted that the first and second beads **24, 26** can be made of any suitable materials, such as plastics, metals, paper materials, glass, and wood, and can be formed with any desired patterns. However, it is apparent that the second beads **26** that accommodate the lamps **12** must be transparent or translucent to allow radiation of the light emitted from the lamps **12** therethrough.

[0025] Also referring to **Figure 3**, which shows another embodiment of the beaded decorative light string in accordance with the present invention, generally designated with reference numeral **10A**, the beaded decorative light string **10A** is substantially similar to the beaded decorative light string **10** with reference to **Figures 1 and 2** whereby identical parts are designated with the same reference numerals and are not described in details for simplifying the description. The beaded decorative light string **10A** comprises wires **16** to which a lamp socket **14** retaining a lamp **12** is connected, and first and second beads (only second bead **26** being visible in **Figure 3**) attached to the first and second sections of the wires **16**, respectively, for decoration purposes.

[0026] In the beaded decorative light string **10A**, the lamp socket **14** is not provided with a wire clip and instead, a mount **22A** is formed in the second half **40** to receive and retain the lamp socket **14** so as to fix the lamp **12**, as well as the

second section of the wires **16**, if desired, inside the second bead **26**. It is thus noted that in the beaded decorative light string **10A**, the lamp **12** is fixed to the second bead **26**, rather than floating inside the bead **26** as illustrated in **Figures 1 and 2**.

[0027] Referring to **Figure 4**, which shows a further embodiment of the beaded decorative light string in accordance with the present invention, generally designated with reference numeral **10B**, the beaded decorative light string **10B** is a modification of the beaded decorative light string **10A** with reference to **Figure 3** whereby identical parts are designated with the same reference numerals and are not described in details for simplifying the description. The beaded decorative light string **10B** comprises wires **16** to which lamp sockets **14** is connected, and first and second beads (only second bead **26** being visible in **Figure 4**) attached to first and second sections of the wires **16**, respectively, for decoration purposes.

[0028] In the beaded decorative light string **10B**, two lamp sockets **14** are accommodated and fixed in the second bead **26** by a mount **22B** formed in the second half **40** to receive the lamp sockets **14** so as to fix the lamps **12** inside the second bead **26**. It is noted that if desired, the number of the lamps **12** accommodated inside each second bead **26** can be increased and is only subject to the constraints imposed by the physical size of the second bead **26**.

[0029] **Figure 5** shows an application of the light string **10** (or **10A**, **10B**) of the present invention, wherein the light string **10** (**10A**, **10B**) is wound around a Christmas tree **52** for illuminative decoration purposes. It is certainly apparent that the light string **10**, **10A**, **10B** of the present invention can be used in the same way as any conventional light strings for decoration and thus no detail is needed herein.

[0030] Although in the above discussion, the decoration members **24**, **26** are made spherical, in the form of “beads”, it is apparent to those having ordinary skills to shape the decoration members in different forms, such as a contour of a doll, designated with reference numeral **100** in **Figure 6**, and a star **200** in **Figure**

7. In the embodiments illustrated in **Figures 6** and **7**, only some of the beads are replaced by the doll figures **100** or stars **200** whereby the doll figures **100** (or the stars **200**) are alternating with the beads. The lamps of the light strings **10C** of **Figure 6** (or light string **10D** of **Figure 7**) that are attached to wires **16** can be accommodated in each or some of the doll figures **100** (or each or some of the stars **200**). Alternatively, the lamps can be accommodated in the beads or a combination of the beads and the doll figures (or the stars). This provides a great variation of the overall configuration of the light string in accordance with the present invention.

**[0031]** Although the present invention has been described with reference to the preferred embodiments thereof, it is apparent to those skilled in the art that a variety of modifications and changes may be made without departing from the scope of the present invention which is intended to be defined by the appended claims.